50 YEARS ON THE SHELF

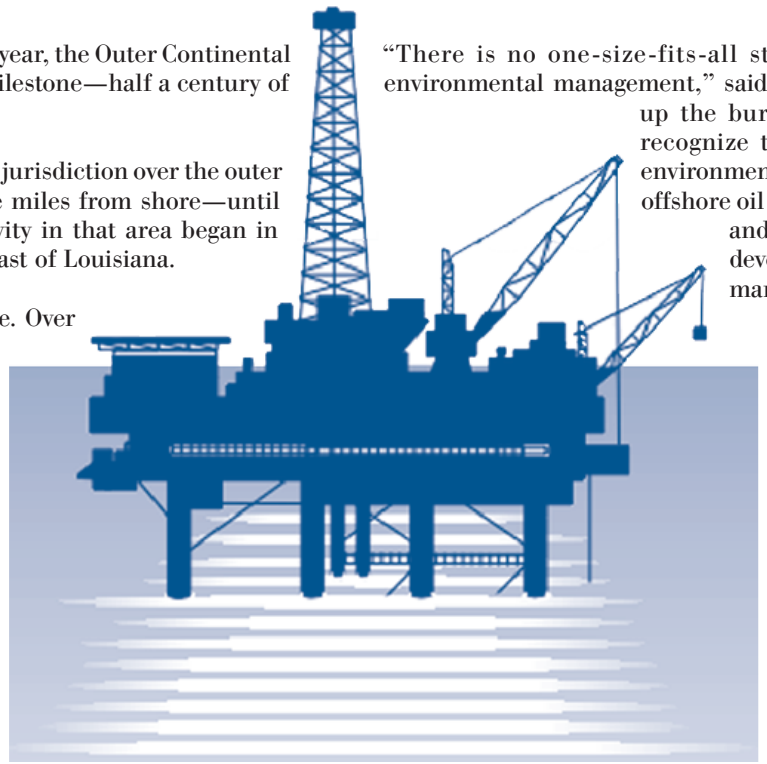
Interior Marks Half a Century Managing Development on the U.S. Outer Continental Shelf

Tim Redding and Renee Orr

As the Department celebrates its 150th anniversary this year, the Outer Continental Shelf oil and gas program marks another significant milestone—half a century of regulating petroleum activity in federal waters.

Although the Federal Government did not officially gain jurisdiction over the outer continental shelf—the seabed extending beyond three miles from shore—until the enactment of legislation in 1953, oil and gas activity in that area began in 1946 with the drilling of an exploration well off the coast of Louisiana.

A year later, the first fixed platform was installed there. Over the next several decades, the Outer Continental Shelf program became a significant source of petroleum and associated economic benefits at national, regional, and local levels. In recent years, the U.S. program has made huge strides into water depths exceeding 7,500 feet in the Gulf of Mexico and into the icy, arctic waters of Alaska. Through 1997, the program has overseen the production of more than 11 billion barrels of oil and more than 116 trillion cubic feet of natural gas, and generated over $120 billion in lease bonus, rent, and royalty payments.



While the Minerals Management Service's offshore program continues to bring benefits to the nation—roughly 20 percent of domestic oil production and 27 percent of gas production—it has taken a more prominent role on the world stage by sharing valuable environmental and regulatory knowledge with other nations. MMS has gained considerable knowledge and experience concerning near offshore, deepwater, and arctic activities and is offering to share this expertise with others.

Supporting U.S. Foreign Policy Goals

The offshore oil and gas industry operates from Newfoundland to Norway, from the Gulf of Mexico to the Gulf of Guinea, from Brazil to Brunei. As the industry's worldwide operations expand, MMS is increasingly called on to participate in international projects that further U.S. foreign policy goals.

In this era of interdependence, nations with developed or emerging offshore industries have a growing interest in establishing international operational and environmental standards for their oil and gas programs. As these standards are developed and adopted, they affect the activities of our domestic industry.

MMS uses its extensive regulatory expertise and the resulting offshore industry's record of environmentally sound operations to further the nation's commitment to advancing safe practices across the globe. It does this by providing technical information and by monitoring laws and other developments that have a direct impact on domestic regulatory authority.

"There is no one-size-fits-all standard for offshore oil and gas safety and environmental management," said Acting Director **Thomas Kitsos**, in summing up the bureau's approach to sharing its expertise. "We recognize that each country's geography, sociology, and environmental concerns play a part in how it will manage offshore oil and gas development, so we offer our experience and expertise as a model of how to manage this development in a safe and environmentally sound manner."

Developing International Standards

MMS has a long history of incorporating voluntary industry standards into its regulatory scheme. Currently, the agency incorporates more than 80 private-sector standards in its regulations, most of which are consensus standards developed by committees of the American Petroleum Institute.These standards enable MMS to reduce the amount of prescriptive regulations governing offshore oil and gas operations without compromising safety.

The agency also participates in the development of comprehensive sets of recognized and compatible standards through national and international organizations such as the American Petroleum Institute and the International Organization for Standardization (ISO). At a forum in China last September, MMS provided technical information to ISO's Committee on Materials, Equipment, and Offshore Structures for Petroleum and Natural Gas Industries. The standards developed by this group will affect the oil and gas industry domestically and internationally for years to come.

Carolita Kallaur, MMS associate director for Offshore Minerals Management, has extolled the virtues of such standards in numerous presentations to industry and fellow regulators. "Properly developed standards can increase productivity and efficiency in government and industry, expand opportunities for export and international trade, conserve resources, improve health and safety, and protect the environment," she said.

Cooperating on Research

MMS is an important member of the International Committee on Regulatory Authority, Research, and Development, which coordinates research activities, exchanges information, and promotes cooperation among member countries. The United Kingdom, Canada, and Norway also are primary sponsors of this committee. Burgeoning interest in offshore oil and gas development brought

A Message from the Acting Director

Though the youngest member of the Interior family, the Minerals Management Service plays, and will continue to play, a key role in managing America's offshore energy resources.

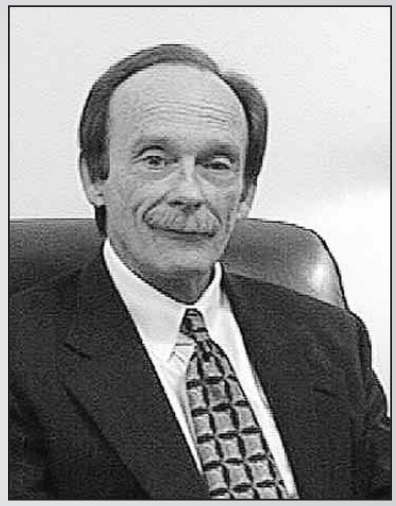
Established in 1982, the agency's mission is to manage the mineral resources on the Outer Continental Shelf in an environmentally sound and safe manner and to collect revenues from companies that extract oil, natural gas, and other minerals from offshore and onshore federal and Indian lands. MMS then distributes these revenues to state, tribal, and federal accounts.

How we manage our energy resources now will determine how we live and work in the United States for decades to come. The decisions we make will affect many aspects of our daily lives and those of our children, such as the availability of foods in the market, how we get to work, what goods are produced in our factories, and the quality of our environment.

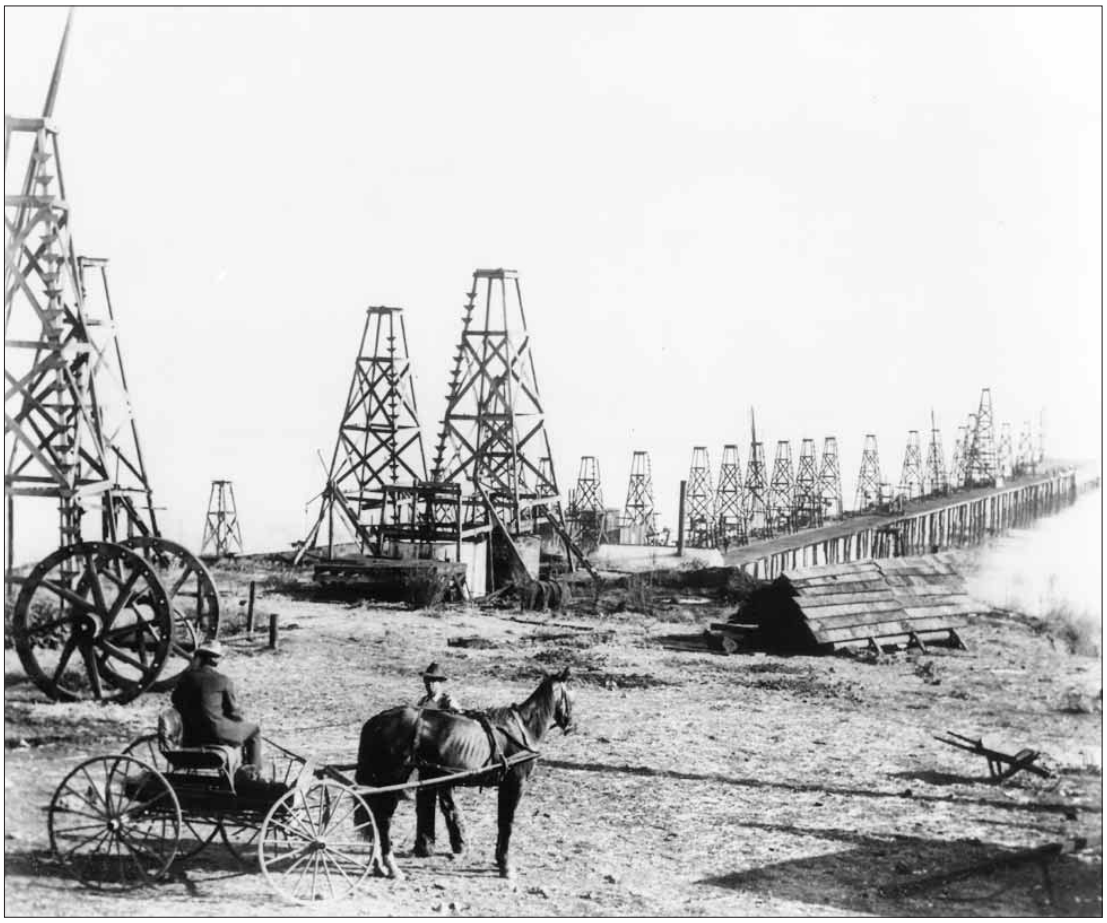
As the nation's steward of offshore mineral resources, the agency is committed to achieving the proper balance between providing energy for the American people and protecting unique and sensitive coastal marine habitats. Before exploration and development can begin, MMS conducts multi-faceted environmental studies that generate the scientific information essential to making sound leasing decisions. In essence, we work to minimize the potentially negative effects that offshore operations could have on marine environments.

Jacques Cousteau once said that "the future of civilization depends on water . . . you now have the duty, the time, to convince people." As human populations grow, so will the pressures on the marine environment. The MMS takes seriously the protection of that environment by continuing to develop effective regulatory measures, such as our safety and environment management program, to ensure safe and clean offshore operations.

As we head into the next century, the agency will continue to keep pace with a changing world. We will always strive for new and better ways to do our job to better serve the American people.



Thomas R. Kitsos
Acting Director
Minerals Management Service



By the early 20 Century, oil production wells were moving into the shallow tidal waters of U.S. coastal areas.

participants from Japan, China, Denmark, the Netherlands, and Brazil to recent committee meetings and workshops.

Other significant research efforts focus on deepwater and arctic operations. MMS recognizes that the technological and regulatory challenges posed by those activities are not unique to the United States and cooperates with its international counterparts on a number of joint research projects. This strategy is intended to leverage the limited funds that are available for scientific study around the world to effectively address common offshore oil and gas safety and environmental issues.

Sharing Information and Experience

MMS has an ongoing dialogue with Canada, the United Kingdom, Australia, the Netherlands, and Norway in an established International Regulators Forum to exchange engineering, scientific, and systems information and share best practices. The goal is to improve the safety of offshore oil and gas operations among participating countries.

The agency has initiated and joined in numerous international workshops to exchange information about offshore oil and gas safety, operations, and environmental issues. A workshop in Indonesia last October dealt with the decommissioning of offshore oil and gas platforms in the Asia-Pacific region. The workshop was conducted under the auspices of the Asia Pacific Economic Cooperation Marine Resources Conservation Working Group.

"MMS's assistance is critical to identifying cost-effective and proven ways to raise the environmental standards of offshore oil and gas activities in this region," said **Eileen Claussen**, the former assistant secretary of State for Oceans and International Environmental and Scientific Affairs.

MMS also is a working with Norway and Russia on a study to examine the feasibility of establishing a comprehensive offshore oil and gas safety and environmental regime in Russia. This effort has received strong support from the Russian government.

"We recognize the significant progress made and continue to support the cooperation between the Ministry of Natural Resources of the Russian Federation and the United States Minerals Management Service," said **Sergei Kiriyenko**, Russia's minister of Fuels and Energy, "and we endorsed the initiative to promote environmentally sound approaches to future oil and gas development in Russian offshore areas, including arctic waters."

Another of the agency's notable ongoing, international efforts is a project sponsored by the U.S. Agency for International Development to assist the newly independent countries of Kazakhstan and Turkmenistan as they attempt to establish stable legal and regulatory institutions governing offshore oil and gas development in the Caspian Sea.

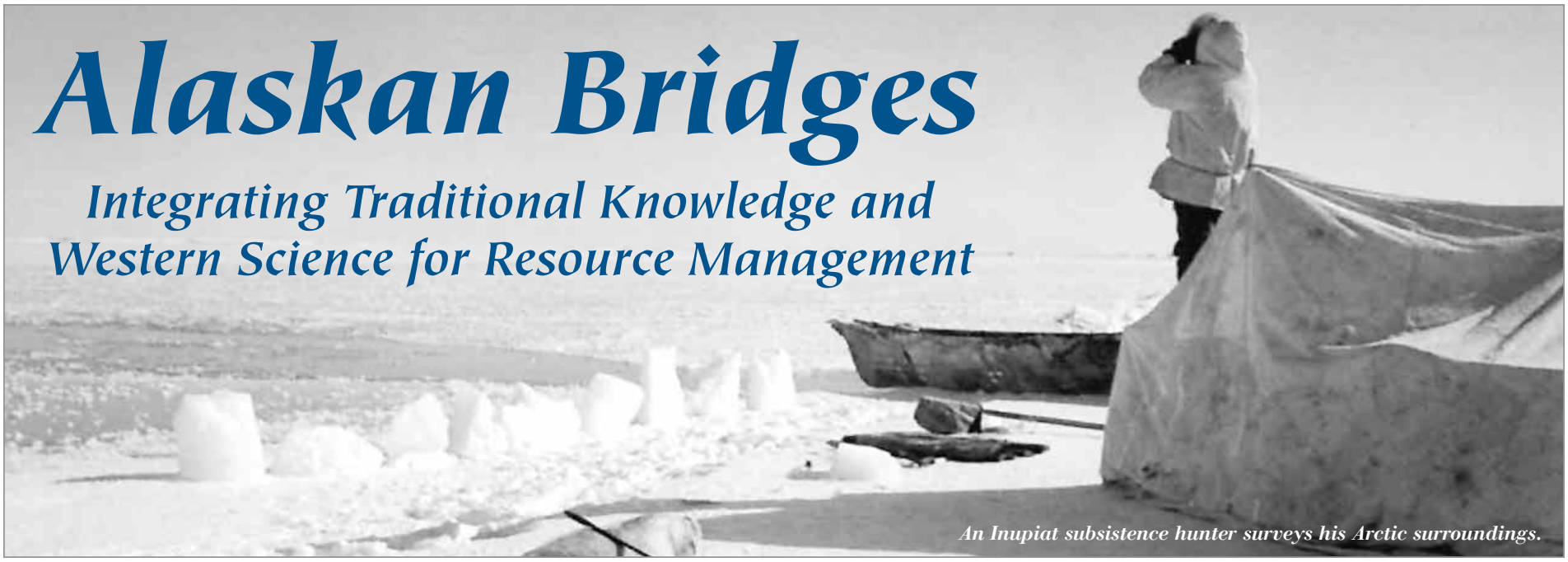
MMS's participation in the region is part of a larger Administration focus intended to promote American foreign political interests by fostering the expansion of free and open markets and ensuring confidence in U.S. and other Western investments in the region.

Into the 21st Century

The U.S. Department of Energy projects that the United States and the rest of the world will continue to rely heavily on petroleum to meet energy needs well into the next century. By building on the success of the first 50 years of Outer Continental Shelf activity in this country and by expanding and strengthening our interactions with other offshore players on the international stage, MMS hopes to have a leading role in assuring that offshore oil and gas resources are developed to contribute to the world's energy supply in a way that is safe and environmentally responsible.

Alaskan Bridges

Integrating Traditional Knowledge and Western Science for Resource Management



An Inupiat subsistence hunter surveys his Arctic surroundings.

Robin Cacy

A Native Alaskan hunter once saw a polar bear far off across flat ice, where he couldn't stalk it without being seen. But he knew an old technique to mimic a seal. He lay down in plain sight, conspicuous in his dark parka and pants, then lifted and dropped his head like a seal, scratched the ice, and imitated flippers with his hands. The bear mistook his pursuer for prey. Each time the hunter lifted his head the animal kept still. When the hunter feigned sleep, the bear crept closer. When it was near enough, a gunshot pierced the snowy silence. That night the villagers shared polar bear meat.

This story, and others like it, are passed on orally from generation to generation among the native people of Alaska. Some also are told through dance. The stories illustrate the importance of traditional knowledge to subsistence hunting and, in a larger sense, to the survival of human life and native culture in the Arctic.

Inupiat traditional knowledge also is important to resource managers. Understanding the origin and content of this body of knowledge, how it is preserved, and how it differs from Western science can help managers to make appropriate decisions regarding critical natural resources.

According to the native people of Alaska, traditional knowledge is practical, common-sense information that is based on the teachings and experience passed down from elders. It includes extensive and holistic understanding of the environment and the interrelationship of its various parts. These traditions provide the framework for deciding how resources are used and shared.

"This is knowledge about the natural world from generations of observations by native people who could be killed if they acted on wrong information," said **Dr. Tom Albert**, senior biologist for the North Slope Borough of Alaska, Department of Wildlife Management. "With this in mind, there is a strong tendency for traditional knowledge to lean toward the truth," he added.

"Most native people use traditional songs, stories, legends, dreams, methods, and practices as a means of passing on this knowledge," said **Michael Baffrey**, an MMS socio-cultural specialist. "Sometimes it is preserved in artifacts handed down from father to son or mother to daughter. There is usually no real separation between secular and sacred traditional knowledge and practice—they are one and the same."

Comparing traditional knowledge and Western science is difficult at times. For example, native people have a far richer and more subtle understanding of their natural environment than do non-natives. Western science generally excludes the humanistic approach and relies on the scientific method to achieve knowledge. Traditional knowledge assumes a holistic view including language, culture, practice, spirituality, mythology, customs, and even the social organization of the local communities. While it may not be appropriate to regard the two as equivalent, decision-makers will use traditional knowledge in conjunction with Western science.

Traditional knowledge is primarily an oral record. "When an elder dies, a library burns" is a native saying that underscores the fact that most traditional knowledge is conveyed in non-written form. There are, however, some written sources of traditional knowledge, according to **Patricia Cochran**, of the Alaska Native Science Foundation. These include some written ethnographies, oral histories, interviews, land-use inventories, archived transcripts and recordings, public hearing testimony, and subsistence questionnaires. Some of this material is housed at the U.S. Bureau of Indian Affairs, and the North Slope Borough maintains a traditional land use inventory.

To add to this collection, MMS's Environmental Studies Program funded a four-year agreement with the Subsistence Division of the Alaska Department of Fish and Game to gather ethnographies and oral histories in Alaskan coastal communities. MMS also awarded a three-year study to the Ukpeagvik Inupiat Corporation for the collection of traditional knowledge on the Alaskan North Slope. The study is gathering information that can be used by federal and state decision-makers as well as native and community groups.

"When an elder dies, a library burns."

Native Alaskan leaders also have suggested that local, state, and federal resource managers focus less on the goal of how to incorporate traditional knowledge in analyses and more on the process of how to come together on the concept of traditional knowledge—to learn better how to look at ourselves in more human terms and less at how we label ourselves.

These suggestions were used in the MMS-funded study, *Bowhead Whale Feeding in the Eastern Alaskan Beaufort Sea: Update of Scientific and Traditional Information*. The agency sponsored this research because of the concerns of Inupiat whale hunters who want their knowledge of the environment in the eastern Alaskan Beaufort Sea incorporated into MMS decision documents. Working with the North Slope Borough and the Alaska Eskimo Whaling Commission, MMS researchers incorporated the traditional knowledge of the Inupiat whale hunters with Western science, thus providing a more complete picture of bowhead whale feeding in the Arctic.

Moreover, Native Alaskan communities' emphasis on traditional knowledge is often part of a larger debate about trust and dignity. MMS, therefore, is integrating Inupiat elders' statements about sea ice, fish, birds, polar bears, marine mammals, bowhead whales, caribou, and subsistence into the text of the Beaufort Sea Lease Sale environmental impact statements and other decision documents. This valuable information provides MMS a clearer picture of the environment in which it is working and potential difficulties that will need to be addressed in the future.

Whitefish, seen here drying on a rack, are an important subsistence food for Native Alaskans. Alaska Region staff photos

To educate a wider circle of government agencies about the value of traditional knowledge, the Alaska Outer Continental Shelf Region sponsors periodic round table discussions with other Interior bureaus, federal and state agencies, university staff, and native groups. All participants are beginning to understand that this knowledge incorporates information about ecosystem relationships and a code of ethics governing the appropriate use of the environment. This code parallels the charge to federal land managing agencies enacted through legislation. The end goals are the same—wise use of resources. Decision-makers have the opportunity to use all information—both traditional knowledge and Western science—to inform future decisions.

RIGS TO REEFS

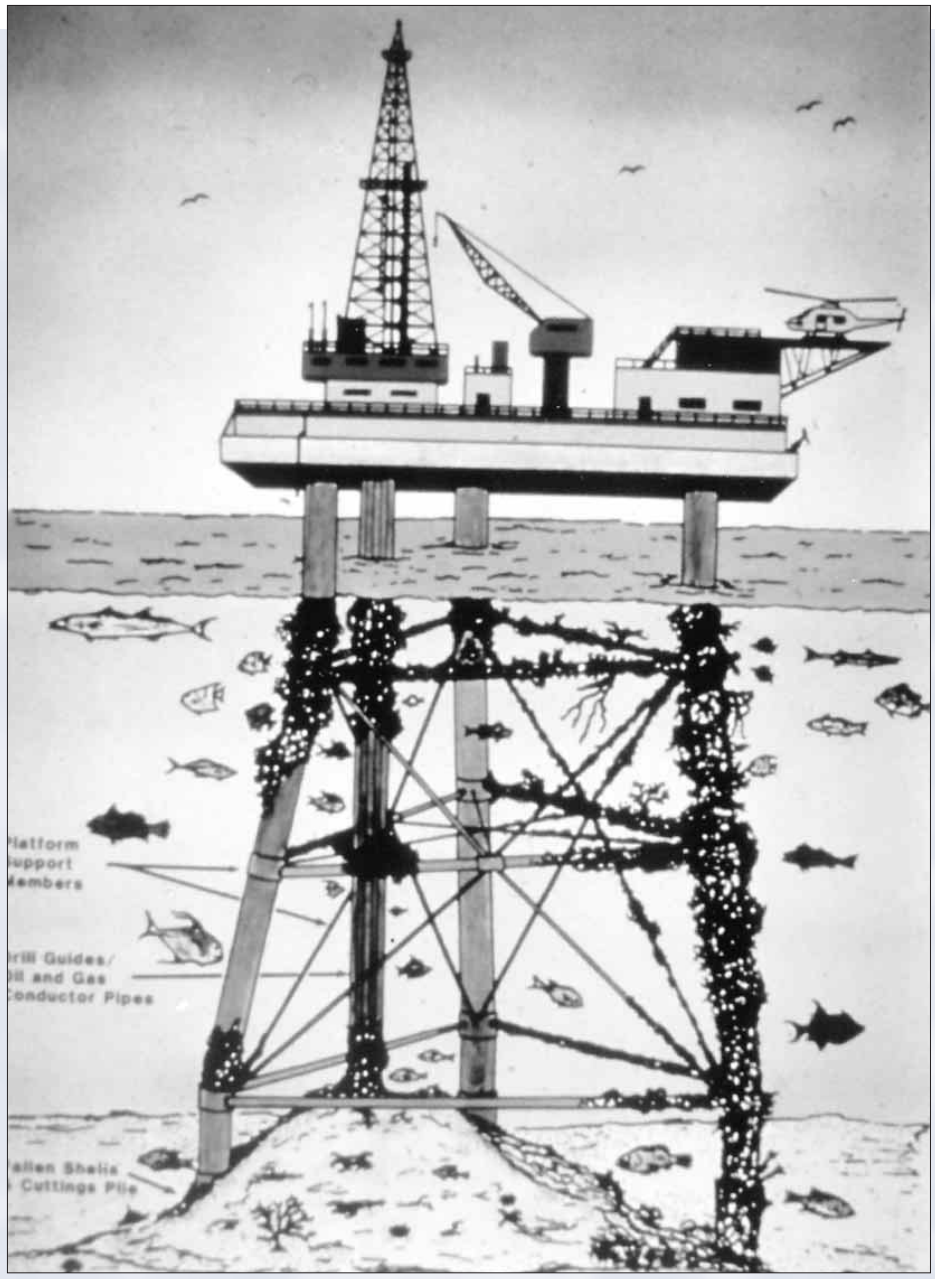
The Vision of Villere Reggio

Villere Reggio's Louisiana roots go back 250 years to Francois Marie Reggio, the first of his ancestors to arrive from France in 1751. "My great-great-great-grandfather, Jacques Phillipe Villere, was the first native-born governor of Louisiana," said Reggio. "In part because of my heritage, I've always felt a certain kinship to my state and I saw the rigs-to-reef concept as a way to do something positive for Louisiana."

He walked along a Gulf Coast beach one morning, looking past the shrimp boats, beyond the buoys, to the horizon. Out there, thousands of rigs were producing natural gas and oil for the nation's energy needs.

And then a thought occurred to him: Those rigs don't last forever. Eventually, they become obsolete, are dragged back to shore, and turned into scrap metal, which seemed like a big waste of money and resources. Why not turn some of the decommissioned production platforms into artificial habitats for fish and create a source of recreation for divers and fishermen?

Thus began **Villere Reggio's** quest to establish a Rigs-to-Reef initiative. "I used to fish around these structures as a kid," he said, "and I always thought what a shame to remove them. Let's keep them. Recycle them."



Platform legs provide recreational opportunities for divers and create artificial habitat for marine life.

Reggio stressed that the Rigs-to-Reef idea benefits everyone. "Oil and gas companies save a portion of the cost of having to take the structures back to shore," he explained. "Fishermen benefit, and so do the fish. Entire ecosystems develop around these artificial reefs. The structures provide excellent artificial habitats for feeding and breeding, attracting and increasing the numbers of fish and fishermen in the gulf," the New Orleans native added.

Hal Osburn, director of the Texas Artificial Reef Program, echoed those thoughts. "Artificial reefs are like an oasis in the desert. They increase viable habitat and improve biodiversity," he said.

Artificial reefs provide habitats for a variety of fish. Entire ecosystems develop around these structures. Photo, above right, by Gregory S. Boland

Reggio, a 30-year veteran of Interior, has been involved with the environmental aspect of offshore oil and gas development for many years. He has worked with government and private-sector groups, emphasizing the long-term economic and social benefits of decommissioned rigs as tools of fisheries development and management.

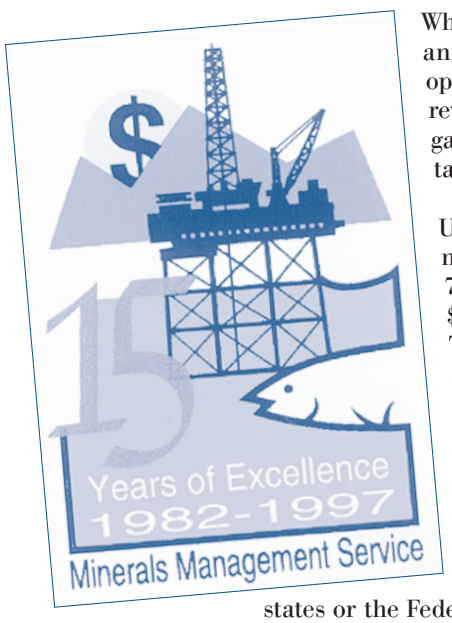
"When you have the opportunity to create something positive for people and the environment, why not take advantage of it," he said. "Why not keep it going?"

His efforts, along with other proponents of the Rigs-to-Reef initiative, led to the enactment by Congress of the National Fishing Enhancement Act of 1984 and the Louisiana Fishing Enhancement Act. Reggio thanked three others who made major contributions to getting the program off the ground—**Maureen Borenholdt** of MMS, and **Virginia Burkett** and **Gene Shinn** at the U.S. Geological Survey. As a result of their efforts and Reggio's dedication, there are now 125 obsolete rigs serving as thriving artificial habitats, many off the coast of his home state.

His efforts did not go unnoticed. In 1987, The Louisiana Wildlife Federation honored him with its prestigious Professional Conservationist of the Year Award. "Mr. Reggio's entire professional career has been devoted to resource conservation," said **Wilson J. Thibodeaux**, the organization's president. And in Houston, he was recently recognized as an "Offshore Pioneer" by the Offshore Energy Center for his tireless work in bringing the rigs-to-reef initiative from concept to reality."

THE BUCK DOESN'T STOP AT ROYALTY MANAGEMENT

A MAJOR SOURCE OF NON-TAX FEDERAL REVENUE



While the MMS's offshore minerals management offices contend with regulatory and environmental aspects of offshore federal leasing, the agency's other operational half, the Royalty Management Program, is responsible for collecting revenues from federal offshore and onshore mineral (including oil and natural gas) leases. The effort is one of the Federal Government's greatest sources of non-tax revenues.

Using sophisticated accounting systems, the royalty office processes more than $300 million each month in bonuses, rents, and royalties from nearly 70,000 leases. This amounts to several billion dollars each year. It peaked at $10 billion in 1983. The recent yearly average has been around $6 billion. Totals fluctuate with market prices, the amount of production, and the number of lease sales.

Located at the Denver Federal Center in Colorado, the royalty offices, along with the Bureau of Indian Affairs and the Office of the Special Trustee for American Indians, also provide revenue management services for mineral leases on Indian lands.

The mineral revenues are distributed to 40 mineral-producing tribes and nearly 20,000 individual allottees, and are not shared with states or the Federal Government. In recent years, Indian mineral revenues have averaged more than $150 million annually.

For offshore leases, the royalty office distributes the collected money to specific accounts of the U.S. Treasury. In recent years, nearly $900 million has been deposited annually to the Land and Water Conservation Fund and $150 million to the Historic Preservation Fund. The remainder is sent to the U. S. Treasury's General Fund. Additionally, a portion of royalties from offshore federal leases that are adjacent to coastal states are shared with those states.

Distribution of revenues associated with mineral development of onshore federal lands is split differently. Fifty percent of the money goes directly to the state in which the lease is located. Forty percent is sent to the Reclamation Fund of the U.S. Treasury. This special account finances the Bureau of Reclamation's water projects in 17 western states. The remaining 10 percent goes to the U.S. Treasury's General Fund. One exception, Alaska, gets a 90-percent share of the revenues while the remaining 10 percent is sent to the U.S. Treasury's General Fund.

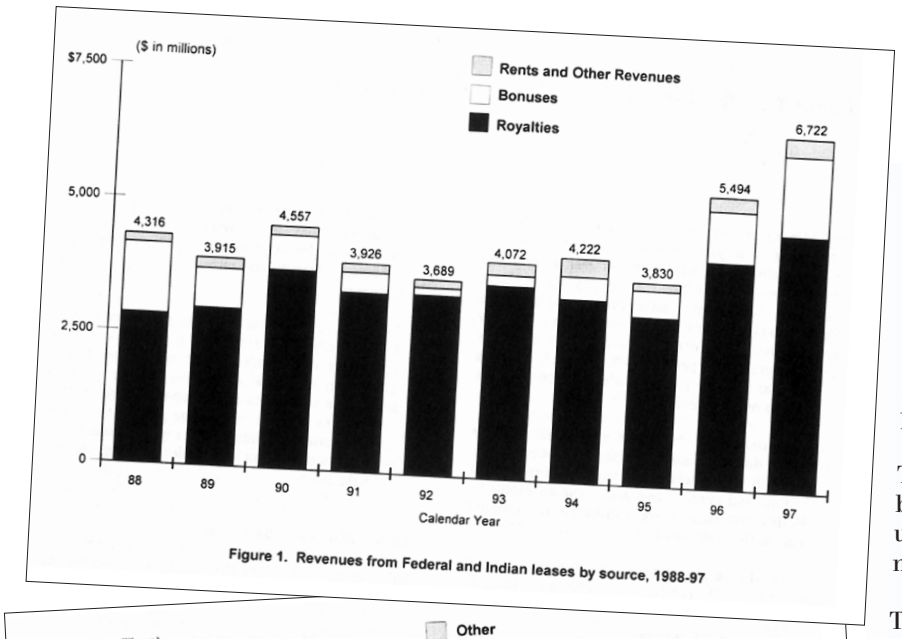


Figure 1. Revenues from Federal and Indian leases by source, 1988-97

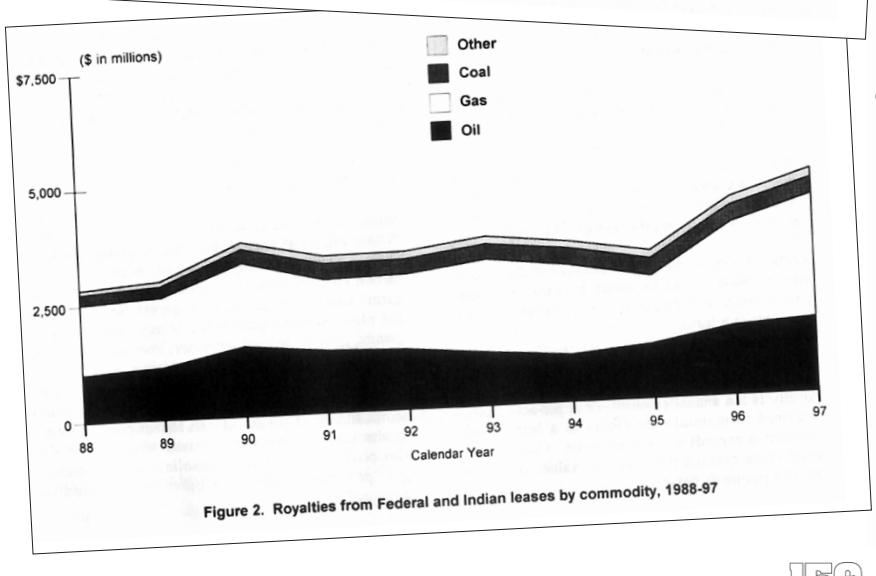


Figure 2. Royalties from Federal and Indian leases by commodity, 1988-97

The Department's responsibilities for resource development and revenue collection date to the early 1920s. The MMS was created as a result of the evolving importance of national mineral development. With growing importance and revenues came recognition of the demand for improved control of those resources.

REENGINEERING ROYALTY MANAGEMENT

In one of the most important initiatives the Royalty Management Program has ever undertaken, the division is reengineering its collection and distribution operations. The RMP, which evolved into an increasingly complex organization since it was created 17 years ago, had launched special initiatives and upgrades to meet its additional demands. But the program outgrew its in-place technology and processes.

The reengineering initiative was launched in 1997 to put into operation new and improved business processes and automated support systems. A program reengineering office was set up in RMP to manage and coordinate the initiative and the MMS assembled a group of senior managers and technicians with diverse skills and disciplines to administer the project.

The new processes were developed and pilot tested with prototype information processing and transaction technology. The reengineering effort is now in its implementation phase and during the next two and one-half years, the RMP will continue to work on more than 50 major areas of improvement to reach its reengineering performance goals. Those include:

Reducing the royalty management business cycle from six to three years;

Providing revenue recipients with access to their money within 24 hours;

Establishing organizational accountability at the producing property level;

Simplifying and streamlining industry reporting requirements; and,

Modernizing RMP's automated support systems.

The reengineered RMP is being organized around two end-to-end core business processes that are highly integrated, focused on outcomes, and less costly to operate. The new RMP will be supported by state-of-the-art automated information systems. Carrying out these reengineering improvements is a sound business decision, clearly cost justified, and prepares RMP to meet its mission requirements well into the 21st Century. This initiative has been designated MMS's highest priority for the year 2000.